

WHAT IS CLAIMED IS:

1. A power output apparatus comprising:
a first inverter;
a second inverter;
a 2Y motor having a first three-phase motor coil and a second
5 three-phase motor coil functioning as stators, energization of said first and
second three-phase motor coils being controlled respectively by said first
and second inverters;
a power supply connected between a first neutral point of said first
three-phase motor coil and a second neutral point of said second
10 three-phase motor coil; and
an electric motor which is different from said 2Y motor.
2. The power output apparatus according to claim 1, wherein
said 2Y motor generates electric power from a rotational force from
an internal combustion engine and starts said internal combustion engine.
3. The power output apparatus according to claim 2, further
comprising a planetary gear to which said 2Y motor, said electric motor and
said internal combustion engine are connected.
4. The power output apparatus according to claim 1, further
comprising:
a third inverter driving said electric motor; and
a control unit controlling said first, second and third inverters,
5 wherein
when said control unit controls said first and second inverters to
allow said 2Y motor to function as an electric generator, said control unit
controls said third inverter to allow said third inverter to drive said electric
motor by electric power generated by said 2Y motor.
5. The power output apparatus according to claim 4, wherein

5 said control unit disconnects said power supply from said first and second neutral points.

6. The power output apparatus according to claim 5, further comprising a relay unit provided between said first and second neutral points and said power supply, wherein

5 said relay unit is controlled by said control unit to connect/disconnect said power supply to/from said first and second neutral points.

7. A motor driving method for driving a 2Y motor coupled to an internal combustion engine of a hybrid vehicle and an electric motor coupled to drive wheels of said hybrid vehicle, comprising:

5 a first step of calculating a first power of said 2Y motor and a second power of said electric motor;

10 a second step of determining whether the sum of said calculated first power and said calculated second power is zero or not; and

10 a third step of disconnecting, when said sum is equal to zero, a power supply from respective neutral points of two three-phase coils included in said 2Y motor.

8. The motor driving method according to claim 7, further comprising:

5 a fourth step of driving said 2Y motor as an electric generator; and

5 a fifth step of driving said electric motor by electric power generated by said 2Y motor.

9. The motor driving method according to claim 7, further comprising:

5 a sixth step of driving, when said sum is unequal to zero, said 2Y motor as an electric motor while increasing a voltage from said power supply to charge a capacitor provided on an input side of an inverter which drives said 2Y motor; and

a seventh step of driving, when said sum is unequal to zero, said 2Y motor as an electric generator while decreasing a DC voltage from said capacitor to charge said power supply.

10. A computer-readable recording medium having a program recorded thereon for allowing a computer to execute drive control of a 2Y motor coupled to an internal combustion engine of a hybrid vehicle and an electric motor coupled to drive wheels of said hybrid vehicle, said computer following said program to execute:

5 a first step of calculating a first power of said 2Y motor and a second power of said electric motor;

10 a second step of determining whether the sum of said calculated first power and said calculated second power is zero or not; and

10 a third step of disconnecting, when said sum is equal to zero, a power supply from respective neutral points of two three-phase coils included in said 2Y motor.

11. The computer-readable recording medium according to claim 10, said computer following said program to further execute:

5 a fourth step of driving said 2Y motor as an electric generator; and

5 a fifth step of driving said electric motor by electric power generated by said 2Y motor.

12. The computer-readable recording medium according to claim 10, said computer following said program to further execute:

5 a sixth step of driving, when said sum is unequal to zero, said 2Y motor as an electric motor while increasing a voltage from said power

5 supply to charge a capacitor provided on an input side of inverters driving said 2Y motor; and

10 a seventh step of driving, when said sum is unequal to zero, said 2Y motor as an electric generator while decreasing a DC voltage from said capacitor to charge said power supply.